

# PATENT SPECIFICATION



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## PROVISIONAL SPECIFICATION

### Improvements in Electrically Heated Hair Waving Apparatus

I, HAROLD WILSON MEREDITH POOK, a British subject, of Court Barton Farm, Creech-St.-Michael, in the County of Somerset, do hereby declare the nature of this invention to be as follows:—

In permanent waving apparatus of the type in which the hair is heated from the outside of the curled tresses, hinged clips are provided which are raised to the necessary temperature and applied to the hair in the appropriate manner. In such an arrangement a considerable number of such clips may be attached to the head at one time and since such clips are unsupported, it is desirable that these clips be as light as possible so as to reduce the weight on the head to a minimum.

According to this invention the clips referred to above consist of a light outer casing which serve to enclose the heating elements and each half of this outer casing is provided with handles which are grasped when opening and closing the clip. On the inside of each half of the clip, and attached to it, is a heating element comprising a strip of material of high specific heat and of sufficient mass to contain the amount of heat required to perform the waving operation. These heating elements may be conveniently about two inches in length, half an inch wide and one eighth of an inch in thickness and be made slightly concave so as to fit closely around the heating tube—to be described hereunder—and also the curled tress of hair. In a preferred form the outer casing and heating elements may be of aluminium or aluminium alloy or similar metal of low specific gravity, or the outer casing may be of such metal and the heating elements of porcelain or other ceramic material. Since it is necessary to apply the clip to the curled tress of hair whilst the clip is very hot a means must be provided to allow handling without discomfort to the operators fingers; and since it is required to keep the weight of the clip as small as possible, a method of heating these clips according to this invention is described later, which obviates the use of heavy heat insulating material on the handles.

According to this invention the method

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of heating the heating clips is as follows. A tube of ceramic material of suitable diameter is arranged in a suitable frame and a length of resistance wire of the required cross section and specific resistance passed through the centre of the tube. The terminal points of the wire are connected to a source of electric energy, and the potential difference and resistance of the wire adjusted so as to dissipate the required amount of heat in the tube. On the outside of this tube are placed the heating clips which are provided each with a spring arrangement so that the heating elements are firmly held in contact with the ceramic tube and thereby raised to the required temperature by conduction of heat from the walls of the tube. A metal tube may be used but a ceramic tube is preferred as a pressure of 200 or more volts may be applied to the ends of the wire without risk of danger to the operator or presenting any of the difficulties which exist when insulation at high temperatures is required.

In a preferred form of carrying this invention into effect a series of five heating tubes approximately half an inch in diameter and nine inches in length, are held in a frame parallel to each other and spaced apart to allow the easy application and removal of the heating clips to and from the tubes. A single spiral element of nickel chrome wire is passed through the five tubes and connected to a supply of electrical energy by suitable connections and switch. Three heating clips are then attached side by side to each of the tubes with their handles uppermost, and the tubes heated by causing an electric current to pass through the heating element or wire. The frame holding the tubes is then turned on a hinge or pivot, arranged at its centre or end, so that it comes to rest with the handles of the clips directly underneath the heating tubes. In this way the heating elements in the clips are raised to the required temperature but the handles attached to the outer casing being out of the path of the hot air rising from, and directly in the path of the cold air rising to the heating tubes, do not become unduly hot. By this man-

ner a thin piece of heat insulating material such as fibre or asbestos or glass is required only on each handle in order to allow the clips to be removed and applied to the hair without discomfort to the operator.

If desired an automatic switch either time or temperature operated may be incorporated to control the heating of the clips so that they attain the correct temperature. The frame described above carrying the heating tubes may be mounted in a suitable cabinet or stand.

Curlers, being short round rods around which the tresses are wound, may be provided and may be preferably of ceramic material or ceramic coated metal to produce the configuration of the curls which may be wound directly on such curlers without any danger of corrosion or staining the hair. This particularly when chemical reagents are employed in the process.

Dated the 11th day of November, 1943.  
HAROLD W. POOK.

## COMPLETE SPECIFICATION

### Improvements in Electrically Heated Hair Waving Apparatus

I, HAROLD WILSON MEREDITH POOK, a British subject, of Court Barton Farm, Creech-St.-Michael, in the County of Somerset, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to electrically heated hair waving apparatus.

According to the present invention an apparatus for electrically heating clips for hair waving comprising a frame in which are mounted a number of parallel tubes through each of which passes a heating element, is characterised in that the tubes are of porcelain or other ceramic material through all of which passes a single spiral heating element of nickel chrome wire, the frame being hingedly mounted on a casing so as to enable it to be moved into a horizontal position, whereby clips fitted to the tubes have their handles directly underneath the tubes and are thus out of the path of the hot air rising from the tubes and are directly in the path of cold air rising to the tubes.

The invention will now be described with reference to the accompanying drawings, wherein:—

Fig. 1 is a sectional view of a heating apparatus.

Fig. 2 is a plan view of Fig. 1 with the cover removed.

Fig. 3 shows an elevation of a frame in which heating elements are mounted.

Fig. 4 shows a clip.

Fig. 5 is a section of the line V—V of Fig. 4.

As shown in the drawing a casing 1 has hinged thereto at 2 a cover 3 forming a frame for heating elements 4. Each heating element is formed by a tube 4 of porcelain or other ceramic material through which passes a resistance wire 6.

In the construction shown five tubes 4 are provided which are approximately half an inch in diameter and about nine inches in length. The tubes 4 are arranged parallel to one another and are spaced apart a suitable distance so as to enable clips to be applied thereto and removed therefrom easily and conveniently.

Through all the tubes 4 passes successively the resistance wire 6 which is of nickel-chrome wire. The opposite ends of the wire 6 are connected to terminals 7 which are adapted to be connected to mains through a main switch 8 mounted on the casing.

In the circuit including the switch 8 may be included a time switch 9, and a temperature operated switch 10. The time and temperature operated switches operate in the well known manner. It will be understood that the apparatus may be provided only with the time switch 9 or only with the temperature operated switch 10 in addition to the switch 8.

On the casing 1 may also be provided a thermometer indicated diagrammatically at 11.

In the top of the casing 1 is provided an opening 12 into which is fitted a sump 13 formed of perforated metal so as to permit of free circulation of air which enters the bottom of the casing 1 over which is secured a sheet of perforated metal 14.

The casing 1 is mounted on feet 15, located at the corners thereof, so as to raise the casing 1 sufficiently to allow air to pass under the same.

For the purpose of applying clips to the elements 4, the frame 3 is raised into the position shown in broken lines in Fig. 1.

Three clips are attached end to end to each heating element 4 and the frame 3

is then lowered into the full line position shown in Fig. 1. The main switch 8 is now closed whereby the circuit of the resistance wire 6 is closed. The circuit

5 is kept closed until the desired temperature is reached as indicated by the thermometer 11, when the main switch is opened. When a time switch 9 or a temperature switch 10 is provided these  
10 switches open the circuit according to the time of heating or the temperature respectively.

The clips are each formed by two parts 16, 17 hinged together at 18. To  
15 the inside of each part 16, 17 is secured a curved heat-retaining element 19, 20 of a material of high specific heat and of sufficient mass to retain heat for performing the hair waving operation.

20 To the outer sides of the parts 16, 17, on the opposite side of the hinge 18 to the heat-retaining elements 19, 20, are secured layers 21, 22 of low heat conducting material so that they may be  
25 conveniently gripped for applying to a tress of hair.

As will be seen in Fig. 1, the parts 21, 22 of the clips are located inside the sump 13, whilst the clips are being  
30 heated by the elements 4, and are thus exposed to the circulating air as a result of which they do not acquire a temperature which renders them difficult to handle. The heat-retaining elements 19,  
35 20 are however heated to the required temperature for hair waving.

Heat insulating layers 23, 24 are preferably located between the parts 16, 17 and the heating elements 19, 20.

40 Having now particularly described and

ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An apparatus for electrically heating clips for hair waving comprising a  
45 frame in which are mounted a number of parallel tubes through each of which passes a heating element, characterised in that the tubes are of porcelain or other  
50 ceramic material through all of which passes a single spiral heating element of nickel chrome wire, the frame being hingedly mounted on a casing so as to enable it to be moved into a horizontal  
55 position, whereby clips fitted to the tubes have their handles directly underneath the tubes and are thus out of the path of the hot air rising from the tubes and are directly in the path of cold air rising to  
60 the tubes.

2. An apparatus according to Claim 1, wherein five tubes are mounted parallel to one another and in spaced relation in the frame, whilst the resistance wire passes  
65 in series through the five tubes.

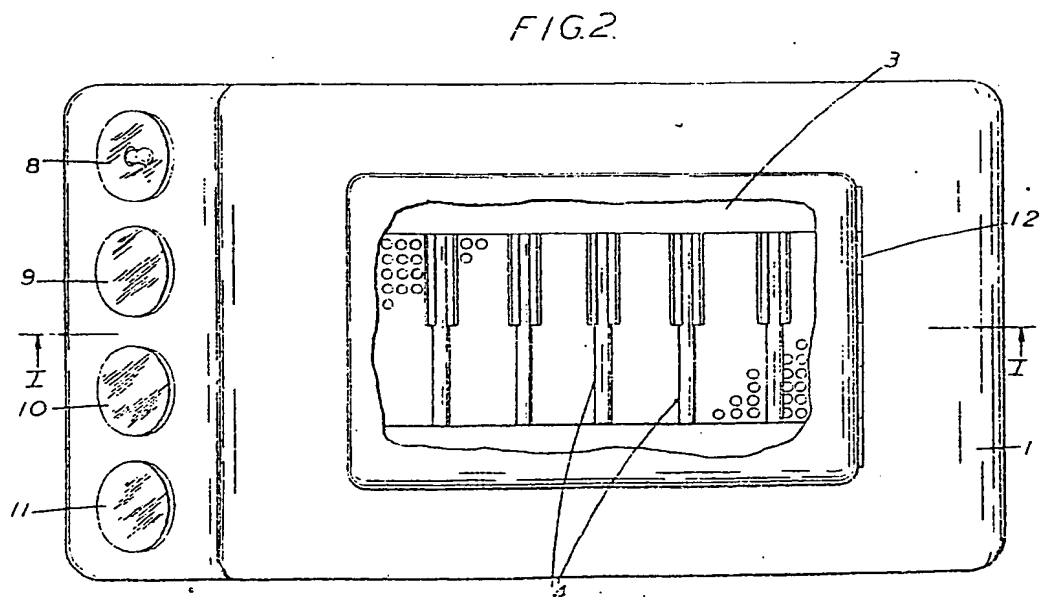
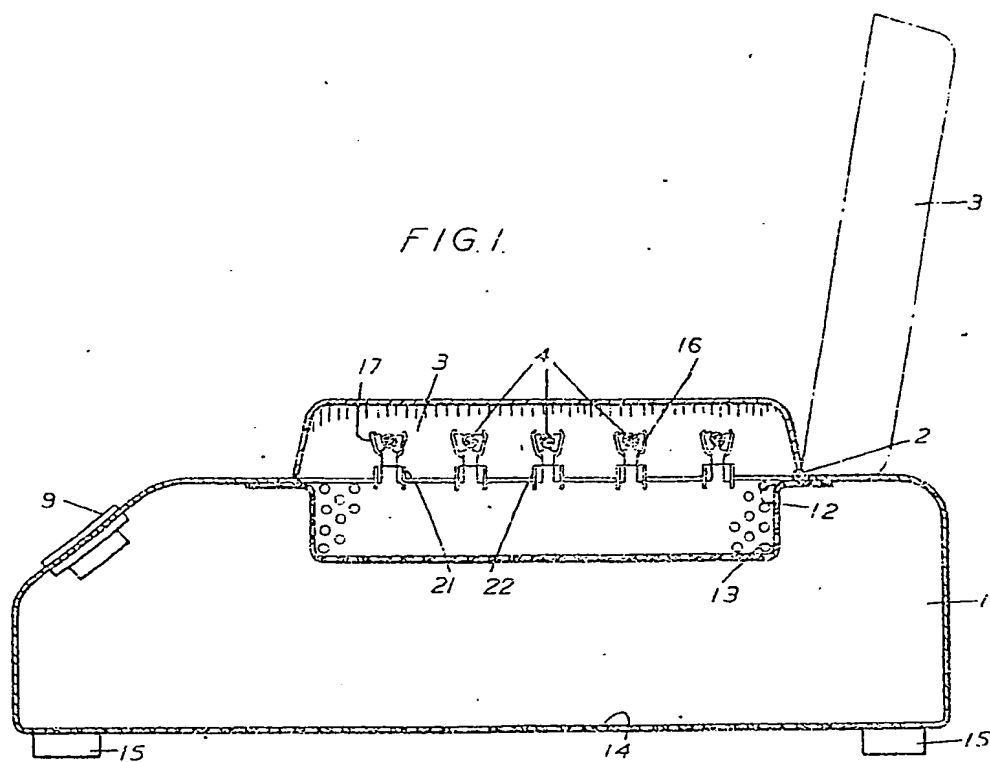
3. An apparatus according to Claim 1 or 2, wherein the casing is provided with a sump of perforated metal to receive the handles of the clips whilst perforated  
70 metal is secured to the bottom of the casing to allow air to enter the latter.

4. An apparatus for electrically heating clips for hair waving purposes, substantially as described with reference to  
75 the accompanying drawings.

Dated this 13th day of November, 1944.

GEORGE HAM & CO.,  
Chartered Patent Agents,  
93/94, Chancery Lane, W.C.2.

[This Drawing is a reproduction of the Original on a reduced scale.]



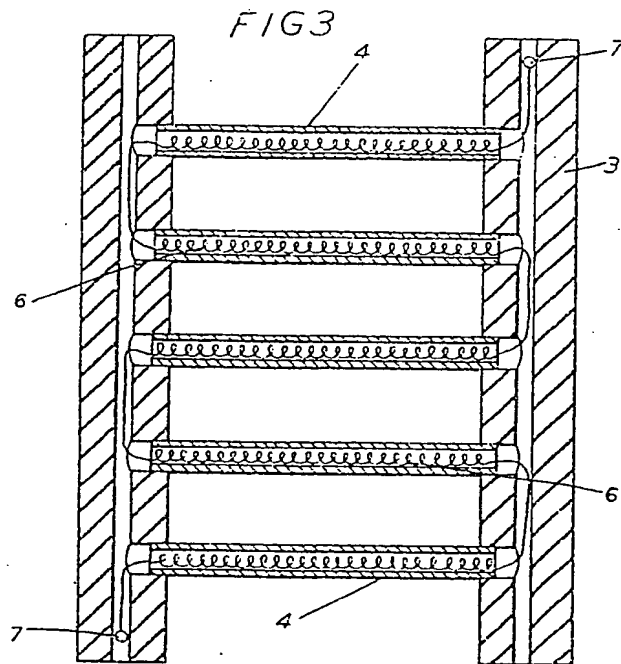
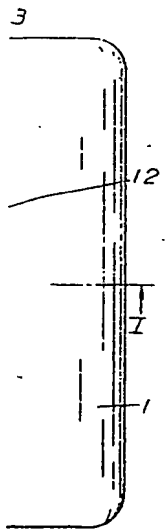
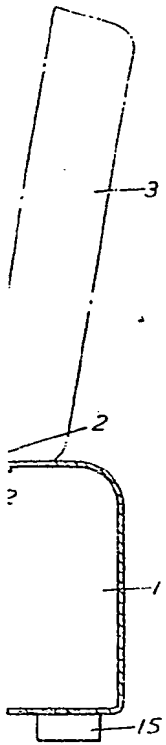


FIG 4.

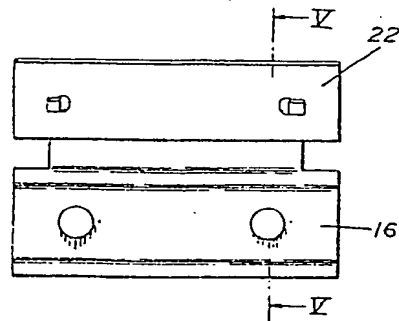
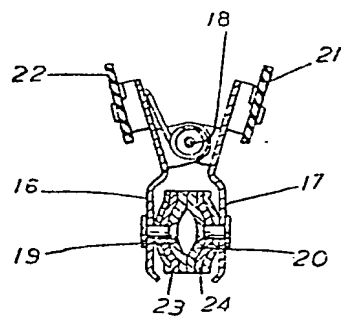


FIG 5



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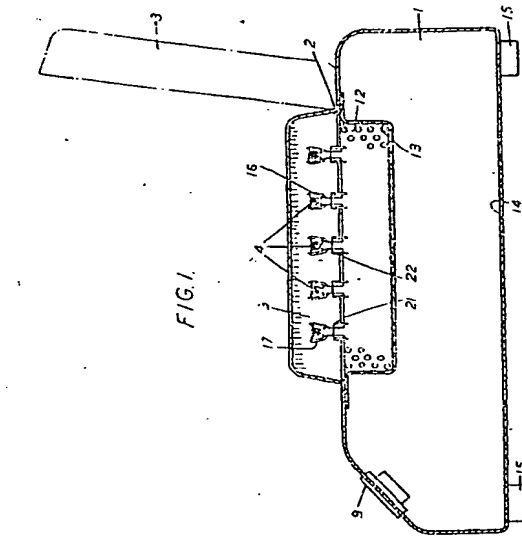


FIG. 1.

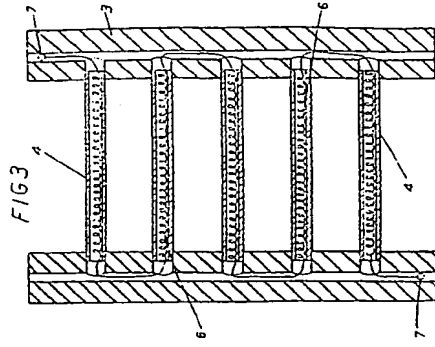


FIG. 3.

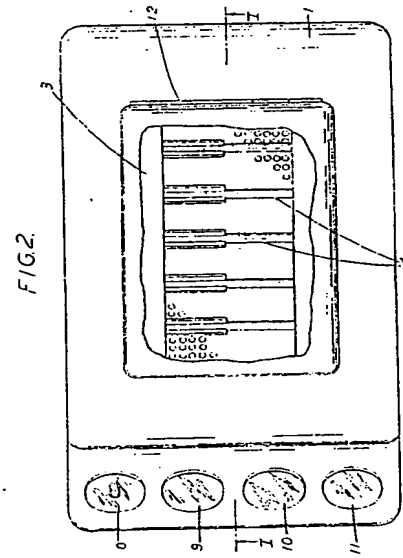


FIG. 2.

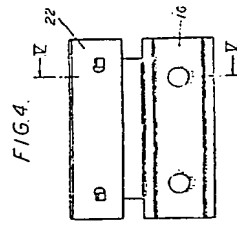


FIG. 4.

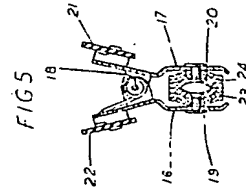


FIG. 5.